

ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO. 1000 SIXTH AVENUE NEW YORK 18, N. Y.

Dear Sir:

January 11th, 1955
Vol. 12...No. 11

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A lawsuit filed by Nuclear Instrument and Chemical Corp. (Chicago) against The Matheson Company involves alleged infringement by Matheson of U.S. Pat. No. 2,519,864 assigned to Nuclear Instrument by Paul B. Weisz, inventor. The invention, patent for which was issued August 22nd, 1950, covers new gas fillings for counter tubes to be operated as self-quenching Geiger-Muller tubes. The suit has been placed on the docket of the District Court of New Jersey (Newark). (Other PATENT news, page 5 this LETTER.)

Some ninety courses are now to be given by the nuclear study center maintained by the Atomic Energy Commission of France at Saclay, near Paris. The courses are especially designed for engineers in private industry, and are an effort by the Commission to further nuclear work in France. At ceremonies opening the first course recently, Francois Perrin, head of the Commission, observed that France had passed from the experimental phase of nuclear energy to that of practical utilization. He predicted that the use of electrical energy in France would quadruple in twenty years, and warned that new generating capacity must be provided. (Other INTERNATIONAL atomic news, page 4 this LETTER.)

A discussion of the progress being made to utilize nuclear energy for large scale production of electrical power will be one of the highlights of the 17th annual American Power Conference Mar. 30-Apr. 1, 1955, in Chicago. Representatives of several utilities active in the development of nuclear plants for central station power production will participate in the forum. The conference is sponsored by Illinois Institute of Technology, Chicago, in cooperation with 14 leading universities and engineering societies.

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ATOMIC ENERGY BUSINESS REPORTS...

RADIOACTIVE MATERIAL NOW BEING SUPPLIED OIL INDUSTRY FROM NEW LABORATORY:-

What is said to be the first commercial laboratory solely for supplying radioactive materials to the oil industry has now been opened in Houston, Tex., by Tracerlab, Inc., Boston nuclear products firm. For the past several years Tracerlab has been supplying tagged chemicals to oil firms. A Tracerlab spokesman said the use of radioactivity by oil firms in exploration, drilling, transportation and refinery operations has now become the largest industrial use of artificial isotopes. In the belief that the demand will continue steady, the firm has recently developed and packaged a number of stock compounds. These are sold under the trade-name TraceSols for the soluble and gaseous compounds, and TraceOids for radioactive isotopes in the form of particulates of varying density and particle size.

CHEMICAL FIRM NOW ASSOCIATED WITH NEW ENGLAND UTILITIES IN ATOMIC POWER:-

Monsanto Chemical Co., which has long been active in nuclear work, has now become associated with the group of utilities comprising Yankee Atomic Electric Co. According to William Webster, president of Yankee, that firm and Monsanto will join in discussions with the USAEC concerning a program under which an electric utility using nuclear energy as the steam generating source might be established in New England.

CONTRACTS AWARDED FOR NEW USAEC CONSTRUCTION:- Two firms, Fruin-Colnon Contracting Co. (St. Louis) and Utah Construction Co. (San Francisco), in a joint venture, have received a cost-plus-fixed-fee contract from the USAEC for construction work in the St. Louis area involving expansion of the USAEC's feed materials processing plants there. The work consists of expansion of the existing USAEC facilities at the Mallinckrodt Chemical Works, St. Louis, and construction of a new facility on a portion of the Weldon Springs Ordnance Works site near St. Louis. Total cost of the St. Louis program has been estimated by the USAEC at \$39,800,000..... At the feed materials production center of the USAEC, Fernald, Ohio, a contract (on a cost-plus basis) has been negotiated by the USAEC with Maxon Construction Co. (Dayton, O.) for construction work on the expansion of this production center. The work includes modification of a number of existing buildings and equipment and auxiliary facilities. Total cost of the Fernald expansion has been estimated (by the USAEC) at \$20,100,000.

FAST TAX WRITE-OFF GRANTED FOR ATOMIC POWER FACILITIES:- Duquesne Light Co. (Pittsburgh, Pa.) has now been given a fast write-off allowance on \$14 million of facilities at the Shippingport, Pa., electric utility it will operate using a nuclear reactor as the heat source. (Westinghouse Electric is constructing the reactor itself; Duquesne will furnish the boilers, turbines and other conventional steam power equipment, and operate the plant on a commercial basis.) Total cost of the new plant has been estimated at \$85 million. Under the quick tax write-off, granted by the Office of Defense Mobilization, Duquesne may write off for tax purposes 75% of its \$14 million cost over a five-year period, instead of the longer capital depreciation period normally required by the Government.

BIDS ASKED AT USAEC'S ROCKY FLATS PLANT:- Bids on a \$60-\$75,000 job have now been asked by the USAEC for a radiography addition to a building at its Rocky Flats, Colo., plant. Plans and specifications from: USAEC, Rocky Flats Plant, P.O. Box 2611, Denver, Colo. Bids will be opened by the USAEC on January 21st.

STATE HEALTH CODE TO GOVERN RADIATION ACTIVITIES IN NEW YORK:- What is believed to be the first action by a state to regulate activities utilizing ionizing radiation is the code of regulation adopted by the Department of Health of the State of New York and which becomes effective July 1st, 1955. The code applies primarily to therapeutic uses of radioisotopes and devices producing ionizing radiation, but it is expected that it will apply also to the environment outside industrial plants, including waste disposal. The interior of industrial plants is under the jurisdiction of the Department of Labor of the State of New York; this department is in the process of formulating such a code, expected to be similar to that of the Health Department. (California is now revising its 1950 code to broaden its scope; Pennsylvania has drafted a code, but not yet passed it; an attempt by the Massachusetts legislature to pass a bill for a code in the 1954 session failed.)

FINANCIAL NOTES:- Analyses of firms with nuclear interests are available from these brokers: Filor, Bullard & Smyth (39 B'way, NYC) on Capitol Uranium Co.; Merrill Lynch, Pierce, Fenner & Beane (70 Pine St., NYC) on Westinghouse Electric; and Pershing & Co. (120 B'way, NYC) on General Electric.

NEW PRODUCTS, PROCESSES & INSTRUMENTS...for nuclear lab & plant...

FROM THE MANUFACTURERS:- Linear Count Rate Meter, of Oak Ridge National Laboratory design, manufactured by this firm under contract, is now available generally on a non-contract basis. Accuracy is said to be within 5% of full scale on panel meter, and long term stability to be within 2%. Resolving time is said to be approximately 2-microseconds..... What this manufacturer believes is the first self-contained recording gamma ray spectrometer is the Spectrogammaometer now being produced by this firm. This is a complete single channel recording pulse height analyzer. It is designed for the study of nuclear gamma ray spectra. It consists of a shielded scintillation probe; a long-term high-regulated negative-power-supply; a wide range preamplifier; a non-overloading linear amplifier; a scaler; and an X-Y recorder used to draw a continuous record of the relationship between counting rate and gamma ray energy. --Radiation Counter Laboratories, Inc., Skokie, Ill.

Analytical count rate meter, Model 1620, may be used with Geiger or scintillation detectors to provide precise quantitative measurement of radioactivity for such purposes as medical diagnoses, tracer work, process control, or for routine surveying for alpha, beta, or gamma contamination in radioisotope laboratories. The instrument converts random counts from the radiation detector into average counting rate, and presents this average on the panel meter which is calibrated in counts per minute. Six ranges covering any radiation intensity up to 100,000 counts per minute are provided, with individual calibration controls for each range.-- Nuclear Instrument & Chemical Corp., Chicago 10, Ill.

NEW FACILITY:- A new processing facility with a capacity of 25-curies per week of iodine-131, a radioisotope useful in medical and industrial fields, is now in operation at Oak Ridge National Laboratory, Tenn. Previous plant for iodine-131 processing at Oak Ridge had a capacity of 3-curies per week. It is produced at Oak Ridge by dissolving uranium slugs and separating the iodine from the other fission products, with which the uranium has been contaminated during its use. The increasing demand for iodine-131 by industry, in medical research, and for clinical diagnosis and treatment of thyroid disorders is reflected in the shipments made by Oak Ridge. First shipments of isotopes began at Oak Ridge in August, 1946; since then 23, 348 shipments of iodine-131 have been made. Approximately 4,636 of these shipments of iodine-131 were made from Jan.-Dec., 1954. (Iodine-131 has a short half-life--eight days. The isotope must therefore be in constant production, since it is impractical to stockpile it.)

NEW BOOKS & OTHER PUBLICATIONS...on nuclear subjects...

Nuclear Geology; Henry Faul, editor. Discusses the occurrence of radioactive elements in rocks and the oceans, and the physical, thermal and chemical effects of radioactivity. Nuclear methods of geophysical exploration and well logging are outlined, and techniques and results of absolute age determinations are covered. 414 pages. --John Wiley & Sons, Inc., New York 16. (\$7.00)

Air Monitor for Alpha-Emitting Isotopes; work done at U.S. Air Force School of Aviation Med., Randolph Fld., Tex. No. PB-115232. (Microfilm \$1.50; photocopy \$1.50.....Standard Source of Radiation for Radiac Detectors; work done at U.S. Naval Res. Lab., Wash., D.C. No. PB-115452. (Microfilm \$2.00; photocopy \$2.75.) --Library of Congress, Pub. Bd. Proj., Wash. 25, D.C.

Progress Report on Fission Products Utilization. Studies of the effect of gamma radiation on vinyl polymer systems (number VI in a series); work done at Brookhaven National Lab. (N.Y.) March 1954. No. BNL-294:T-50) 18 pages. 25¢. Off. of Tech. Services, Dep't. of Commerce, Wash. 25, D.C.

PEOPLE...in the atomic energy business...

Robert Colton has been appointed manager of the new Atomic & Electronics Division of National Securities & Research Corp., N.Y. Mr. Colton was associated from 1945-6 with Kellex Corp. Phillip L. Merritt, who has been with the USAEC since 1942, and most recently was assistant director for exploration in the USAEC's division of raw materials, has now been appointed senior geologist with E. J. Longyear & Co., Minneapolis, Minn., consulting geologists and mining engineers. He will maintain offices in New York City.

RAW MATERIALS...prospecting, mining & marketing...

UNITED STATES:- At the Bullion-Monarch Uranium Co. lease in the Marysvale District of Utah, an extension of the Freedom vein in the uranium development at that property has now been encountered. Operations there are by Vanadium Corp. of America, lessee..... Spencer Uranium Co. has reported that ore from its Yazia mine in northern Arizona has shown (by chemical analysis) to assay out 0.5% uranium oxide. The mine has shipped out, since November, some 200-tons. An official of the company states that it is expected production will be increased to 1000-tons per month during 1955. It is said that mine operations in the open pit here will be comparatively inexpensive, due to the shallow overburden..... A. H. Brickley & Associates, Fort Worth, Tex., have now purchased some 650 claims in Emery County, in the Henry Mountain district of Utah, and in Wayne County..... A merger involving Uranium Corporation of America will be presented at a stockholders' meeting January 14. In the merger will be Fortune Uranium Mines, Inc.; Chief Ute Uranium, Inc.; Uranium Refining & Mining Co.; and others..... National Uranium Corp., said to be one of the largest producers in the United States, has reported discovery of ore on the company's Del Monte claims in the Henry Mountains in Utah.

CANADA:- With rapid progress being made by Gunnar Gold Mines, it is expected that its plant will be producing uranium by September, 1955, according to an official of the firm. Plant capacity is rated at 1,250-tons per day St. Michael Uranium Mines, at its property two miles west of Uranium City, in the Beaverlodge area, Northern Saskatchewan, expects to start drilling shortly, the company advises. First hole is to be in an area where surface sampling and trenching gave encouraging uranium values.

INTERNATIONAL ATOMIC ENERGY NEWS...

INDIA:- With one plant now in operation at Travancore for the extraction of thorium from monazite sands, and a second at Trombay scheduled to start up next May, India will devote efforts to utilizing such thorium in her atomic program, Dr. B. H. Bhabha, director of the atomic energy program in India explained at the recent meeting of the Indian Science Congress at Baroda. Since India is deficient in uranium, research will be done on conversion of thorium to uranium-235; the research will use to best effect present knowledge on such transmutation, Dr. Bhabha pointed out. As a moderator material, heavy water will be used. A plant now in the design stage will be capable of producing 5 to 6 tons of heavy water annually, he stated, with fertilizer also one of the products of such a plant.

JAPAN:- Japanese claims, resulting from the damage caused by thermonuclear tests in the Marshall Islands by the U.S. last year, have now been paid in full by the U. S. Government. Last fortnight the Japanese Cabinet accepted the \$2,000,000 which the U.S. had offered through ambassador J.M. Allison. The compensation is for injuries caused Japanese fishermen and losses caused Japanese fishing interests. (One fisherman was killed and 22 injured through ingesting radioactive particles from the explosion. The fishing interests suffered losses through the many tons of fish that were unfit for consumption, and destroyed, because of the contamination of the sea by the detonations.)

ATOMIC ENERGY EDUCATIONAL ACTIVITY...news & notes...

INSTITUTE OF NUCLEAR MEDICINE ESTABLISHED:- An Institute of Nuclear Medicine is now to be established through funds supplied by General Dynamics Corp., New York firm with nuclear energy interests. The appropriation will be made to the Lovelace Foundation for Medical Education & Research, Inc., a non-profit corporation of Albuquerque, N.M., where the Institute will also be located. It is expected that the Institute will be concerned with exploratory and applied medical research involving radioisotopes, nuclear radiation, the development of special equipment, and publication of a Journal of Nuclear Medicine.

RESEARCH CONTRACTS AWARDED:- Of 34 unclassified physical research contracts (3 new contracts, the others renewals) recently let by the USAEC with Universities, largest grant (\$450,000) was made to Carnegie Institute of Technology for research in connection with a 400 Mev synchrocyclotron.

ATOMIC PATENT DIGEST...latest grants made...

PRIVATE GRANTS MADE:- Scintillation counter. Comprises (in part) a solution of benzene-like compounds (terphenyl and xylene), a photosensitive element positioned to receive light from the solution, and means for detecting pulses generated in the photosensitive element. U.S. Pat. No. 2,698,906 issued Jan. 4th, 1955; assigned to Research Corp., New York. (An 8-claim patent. Inventors, with their address on Dec. 7th, 1950, date of application of this patent, are George T. Reynolds, Giorgio Salvini, and Francis B. Harrison, all of Princeton, N.J.) (This invention, the result of research at Princeton, was termed by a spokesman for the Research Corp. to be basic in the use of liquids as radiation detectors in scintillation counters.)

USAEC GRANTS MADE:- Process of recovering uranium values from artificial ore-like materials containing uranium oxides. Comprises (in part) pulping the finely divided material with a solution consisting of water together with at least one flotation agent chosen from the class consisting of anionic and non-ionic synthetic detergents and soluble soaps of fatty acids and rosin acids. (This solution is devoid of other conditioners, frothers, promoters, and depressants.) This pulp is then subjected to flotation procedure, whereby the uranium values are concentrated in the froth, and may be recovered from it. U.S. Pat. No. 2,697,518 issued Dec. 21st, 1954; assigned to United States of America (USAEC). (An 8-claim patent. Inventors, with their address on Nov. 15, 1950, date of application of this patent, are George A. Bennett, Patchogue, N.Y., and Preston L. Veltman, Severna Park, Md.)

Apparatus for handling frangible articles by remote control. The combination of a carriage to transport a frangible article, several spaced clamp members for detachably grasping the exterior surface of this article, and spaced lever arms supporting these clamps and mounted upon this carriage. Means are provided to move the lever arms toward and away from each other, and to engage and disengage the clamps with the frangible articles. Means are also provided for simultaneously rotating the lever arms in planes transverse to the direction of the movement of the carriage. U.S. Pat. No. 2,697,529 issued Dec. 21st, 1954; assigned to United States of America (USAEC). (A 4-claim patent. Inventors with their address on Feb. 27th, 1951, date of application of this patent, are John P. Hubbell, Garden City, L.I.N.Y., and Henry J. Reinig, West Englewood, N.J.)

Apparatus for producing ions. Includes (in part) the combination of a sealed envelope, electrodes supported within this envelope and defining therebetween an ionizing space. Means are provided within this space for vaporizing the material to be ionized, and means supported within this envelope at one side of the electrodes permit the emitting of a copious supply of electrons. Means are also provided to ionize the vapor between the electrodes. U.S. Pat. No. 2,697,788 issued Dec. 21st, 1954; assigned to United States of America (USAEC). (A 6-claim patent. Inventor, with his address on June 12th, 1953, date of application of this patent, is Robert R. Wilson, Ithaca, N.Y.)

Process for producing curium isotope 238. The steps comprising (in part) bombarding a quantity of plutonium isotope 239 with 80 Mev. alpha particles, thereby producing curium isotope 238 together with various rare earth fission products; dissolving the product mixture with concentrated nitric acid containing boric acid; oxidizing the solution to place the plutonium in the VI oxidation state; precipitating lanthanum fluoride from this solution thereby carrying the rare earth-amercurium fraction away from the plutonium in the solution; and additional procedures, finally selectively eluting curium away from the rare earths and americium in a cationic exchange column with hydrochloric acid of about 13.3 M concentration. U.S. Pat. No. 2,698,290 issued Dec. 28th, 1954; assigned to United States of America (USAEC). (A 3-claim patent. Inventors, with their address Dec. 28th, 1954, date of application of this patent, are Glenn T. Seaborg and Kenneth Street, Jr., Berkeley, Calif.)

Sincerely,

The Staff,
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